CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECURITY INFORMATION

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COUNTRY USSR (Moscow Oblast)

SUBJECT Conditions at Plant 596 at Teplyy Stan

REPORT

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1. Plant No. 596 at Teplyy Stan. manufactured X-ray apparatus. All visitors were introduced 25X1 although names were not mentioned. The Soviets apparently were intent on remaining incognito. They always appeared in groups of two or three. All Soviet visitors took part in conversation, but knew how to conceal their specialties very well. The Soviets digressed intentionally during these conversations, largely in order to avoid giving 25X1 the purpose of their visits and conversations. Leading Soviet technicians were excellently informed on engineering conditions outside the USSR. 25X1 They could usually speak German and were familiar with international engineering terminology. Many of them were astonishingly well-informed on the status of engineering in the United States 25X1

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2. In 1952, a physicist by the name of Stepanov (fnu), a technician with a fine sense of discernment, was appointed chief of the newly-established high-tension engineering institute at Moscow. He previously headed the institute at Leningrad. All Soviets heading offices attempted to staff them with compatriots. For example, one Georgian would usually try to employ another Georgian because of their common origin, regardless of qualifications. Because of this policy, persons from the same area managed to occupy the leading positions in the plant in a short time; this resulted in bitterness on the part of the other employees.

3. X-ray tubes supplied to the plant were of good quality. The manufacture of high-tension, 400-kv tubes was still in the first stages. Attempts were made to copy American tubes for tensions up to one mv. The manufacture of tubes in Leningrad progressed well, and the Leningrad theorists were said to be very efficient. The plant there was equipped with a 1.3-mv experimental installation, including a loop-type overhead line. Cold-rolled sheet metal

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to be used for the construction of transformers, with losses of 1.1 to 1.3 watt/kg, at a field intensity, called B, of 10,000 gauss, was on hand at Plant No. 596. Some high-alloy sheet metal also was available; however, the level of development in this field was not equal to that achieved in West Germany. In all construction work, copper, brass, and aluminum were to be replaced, if possible, by iron. For example, an explanation, citing technical reasons, was required for the use of brass screws for apparatus construction. All work on DC high-tension projects of 3 mv and above was secret.

4. With respect to theory, the USSR had made excellent progress in electrical engineering. In the technological field, however, the USSR, in 1951, still was not as far advanced as were the Germans prior to 1945. Therefore, the USSR puts special emphasis on East German plants and those of Czechoslovakia and Poland (Elektro-Butowo Lodz). During the Hannover Trade Fair, in April and May 1952, notice was given that the Skoda Works had greatly extended its production of current and instrument transformers and, on the basis of former agreements, generally manufactured the same models as the Transformatoren and Roentgenwerk at Dresden. [redacted] 25X1

[redacted] 25X1

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1. Project No. 1, "Development of a 100 mva transformer 220/110 kv", at the VEM Transformatorenwerk Oberschoeneweide (transformer plant) (TRO) is a project for redesigning a previously manufactured model. If the flaws are eliminated, the transformer should deliver full power and sustain full testing-voltage. Project No. 2, "Development of a 400-kv transformer", will require the combined work of a number of available designers. This transformer was designed previously, and either drafts of old plans or foreign construction plans may be used. Project No. 5 calls for the development of 400-kv instrument transformers as developed in 1942. If the old records no longer exist, two 220-kv transformers will probably be coupled by a cascade connection and equipped with a porcelain jacket. A 400-kv pressure-gas switch, development of which is called for by Project No. 23, was also developed previously. Designers involved in the development of the switch still work at the plant.

2. Activities at the Transformatorenwerk Dresden (Transformer Plant) focus on large testing installations which can be constructed only at this plant. In source's opinion, the U.S.S.R. may be especially interested in the following projects: Project No. 1: Development of a single mesh for cascade commutator converters; Project No. 2: Development of a multiple valve to be installed at the vacuum pump; Project No. 6: Research and exploitation of rectifying processes for the construction of high-tension installations; Project No. 10: Development of a 10 mega electron volt betatron; and Project No. 12: Development of high-tension condensers with organic insulation materials. The development of the betatron, ordered by the U.S.S.R., was designed and developed, as early as 1946, by Dipl. Ing. Steyskal (fnu) at SKTB 21 (Sonderkonstruktionstechnisches Buero) (Office of Special Technical Design). Project No. 5, "Development of a 1,000-kv testing transformer", calls for the further development of the 750-kv testing transformer to be manufactured on a large scale. Because of these

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transformers and the cascades assembled from them, the institutes of the U.S.S.R. have modern standardized testing installations of great value. The increase in voltage from 750 to 1,000 kv is of no practical importance. Project No. 3, "200-kv X-ray equipment", at the Roentgenwerk (X-ray apparatus factory), calls for the further development of an existing installation used for material-testing purposes. Preparatory work for this further development was being done at SKTB 21. Project No. 4, "400-kv X-ray equipment", will be an attempt, presumably at the instigation of the U.S.S.R., to equal similar American equipment.[1]

3. At the Moscow negotiations of September 1951, the East German trade delegation was assured of a proposed order for six or seven DC high voltage installations, including one or two installations to generate a 5 or 7 mv voltage and five or six copies of the 3 mv installation supplied in 1949. 25X1
[redacted] the order had not been placed by August 1952. All orders 25X1
for installations of, and over, 3 mv were allegedly canceled. Consequently, the construction of the new large high tension shop, scheduled to be completed by late 1952, was stopped.[2]

1. [redacted] Comment. Annex 1 is a survey on the high priority developing program drawn up by the SKTB 21 in July 1945; Annex 2 is a list of persons employed at the SKTB 21 at that time. 25X1

2. [redacted] Comment. The construction of the large shop to be used for testing the assembly of DC high voltage installations was necessary because the shop at Niederwartha, near Dresden, had proved unsatisfactory. In addition to being excessively damp because of its proximity to the water, it was situated too far away from the main factory. 25X1

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ANNEX 1

First Priority Program of the Office for Special Technical Design 21, Dresden N, Overbeckstrasse (in the Koch & Sterzel A.G. plant), as established in July 1945

1.	Portable oil-testing equipment 30/45 kv	(Tragbare Oelpruefeinrichtung)
2.	Mobile oil material testing equipment 60 kv	(Fahrbare Oel-Materialpruefeinrichtung)
3.	DC cable testing equipment 40 kv	(Gleichstrom-Kabelpruefeinrichtung)
4.	DC cable testing equipment 100 kv	(Gleichstrom-Kabelpruefeinrichtung)
5.	Dry testing equipment for insulated cables	(Trocken-Pruefanlage fuer isolierte Leitungen)
6.	High voltage test transformer 750 kva/750 kv in addition to accessories, switch gear, etc, for example, second and third cascade	(Hochspannungs-Prueftrafo 750 kva/750 kv nebst Zubehoer, Schaltanlagen etc., z.B. 2 und 3er Kaskade)
7.	High voltage test transformer 300 kva/300 kv	(Hochspannungs-Prueftrafo)
8.	High voltage installation for electric gas cleaning	(Hochspannungsanlage fuer elektrische Gasreinigung)
9.	Current transformer 110 kv	(Stromwandler)
10.	Voltage transformer 110 kv	(Spannungswandler)
11.	Combined current and voltage transformer 110 kv	(Kombinierte Strom- und Spannungswandler)
12.	Current transformer 220 kv	(Stromwandler)
13.	Voltage transformer 220 kv	(Spannungswandler)
14.	Combined current and voltage transformer 220 kv	(Kombinierte Strom-Spannungswandler)
15.	Mobile cable testing installation 250 kv	(Fahrbare Kabelpruefanlage)
16.	DC high voltage installation 1.5 mv	(Gleichstrom Hochspannungsanlage)
17.	Impulse testing installation 2 mv	(Stosspruefeinrichtung)
18.	High frequency test equipment 1.5 mv - Tesla installation	(Hochfrequenz-Pruefeinrichtung)
19.	Sphere gaps with peak voltmeter equipment to 1.5 m spherical diameter	(Kugelfunkenstrecken mit Scheitelwert-messeinrichtung bis 1,5 m Kugel-Durchmesser)
20.	Ohmic potentiometer for power plants	(Ohmscher Spannungsteiler fuer Stossanlagen)
21.	Capacitative potentiometer	(Kapazitiver Spannungsteiler)

22.	Amplitude measuring equipment	(Scheitel-Wert - Messeinrichtung)
23.	Control transformers with carbon rolls	(Regeltrafos mit Kohlerollen)
24.	Control transformers of special types for stage lighting including locking frame	(Regeltrafos in Spezialausfuehrung fuer Buehnenbeleuchtung einschliesslich Stellwerk)
25.	Normal current transformer to 3000 amp.	(Normal-Stromwandler bis 3000 A)
26.	Normal voltage transformer to 400 kv	(Normal-Spannungswandler bis 400 kv)
27.	Self-balancing calibration equipment for current and voltage transformer	(Selbstabgleichende Eicheinrichtung fuer Strom- und Spannungswandler)
28.	Self-balancing power factor measuring equipment to 400 kv with standard transformer	(Selbstabgleichende Verlustwinkel-Messeinrichtung bis 400 kv mit Normalwandler)
29.	Control desk for calibrating equipment	(Schaltpulte fuer Eichanlagen)
30.	Recording current transformer measuring equipment	(Schreibende Stromwandler-Messeinrichtung)
31.	Meter calibrating equipment	(Zaehlereicheinrichtung)
32.	DC installation for 3 mv	(Gleichspannungs-Anlage fuer 3 Mill. V)
33.	Combined current and voltage transformer for 380 kv	(Kombinierte Strom- und Spannungswandler fuer 380 kv)

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ANNEX 2

SKTB Personalities

1. Soviet Head: Prof. Dr. Ing. Major Bamdas (fnu).

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2. Successors: Major Barski (fnu) and Gardeyev (fnu)

3. German Head:

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4. Deputy: Dipl. Ing. Stejskal (fnu); he is technically qualified.

5. Labor Head: Dr. Ing. Otto Erich Noelke

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6. Bahrmann, Obering. (fnu)

7. Dunkel, Viktor Ingenieur

8. Dr. Winter (fnu)

9. Brey, Obering. (fnu)

10. Koettnitz, Dipl. Ing. (fnu),

11. Zirkel, Ing. (fnu)

12. Tesche, W. Ing.

13. von Schiessl, Ing. (fnu)

14. Schnuhr, W. Dipl. Ing.

15. Welter, E. Obering.

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16. Gaebler, Dr. (fnu)

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17. Steinke, Ing. (fnu)

18. Gussmann, Ing. (fnu)